

## CURRICULUM VITAE

**Name** Karl-Erik L. Eriksson  
**Birthdate** May 27, 1932

### Education

University of Uppsala, Sweden	B.S.	1958	Chemistry
University of Uppsala, Sweden	Ph.D.(fil. lic)	1963	Biochemistry
University of Stockholm, Sweden	Dr.Sci.	1967	Biochemistry

### Military Education and Service

1952-53 (15 months) Basic training at I17. Bohuslän's Regiment, Uddevalla, Sweden.

1954 (6 months) Army Cadet School at Ulriksdal, Sweden.

1955 -1974 Officer in the Reserves at I 3; The King's Own Grenadiers, Örebro, Sweden. Advanced to the rank of Captain (corresponding to Major in the U.S. Army, Swedish ranks are one level lower).

### Research and Professional Experience

1958-64 Research Assistant, Swedish Forest Products Research Laboratory (STFI)

1968-69 Postdoctoral Fellow, California Institute of Technology, Pasadena, CA

1964-88 Head, Biochemical, Microbial and Biotechnical Research at the Swedish Forest Products Research Laboratory (STFI)

1988-present Professor of Biochemistry and Eminent Scholar of Biotechnology, Department of Biochemistry, University of Georgia, Athens, GA

1990-present Adjunct Professor of Biochemistry, Institute of Paper Science and Technology (IPST), Atlanta, GA

1992-present Adjunct Professor of Biological and Agricultural Engineering, University of Georgia, Athens, GA

### Other Professional Experience

#### *Industrial and Governmental Consulting:*

1977 United Nations Food and Agricultural Organization expert in India

1981 Consulting with the Cuban government on questions concerning utilization of sugar cane bagasse

1984 Appointed by the Swedish Organization for Research Cooperation with Developing Countries (SAREC) to evaluate possibilities for cooperation with Cuba on sugar bagasse utilization  
United Nations Industrial Development Organization expert in India

- 1987 Visited scientific institutions in Uruguay and Argentina and organized scientific cooperations with these two countries on behalf of the Swedish Organization for Research Corporation with developing countries (SAREC)
- 1990-pres Technical Expert (Consultant) on Teltech Resource Network Corporation
- 1991 Consultant on Industrial Enzymes, Nordic Fund for Technology and Industrial Development
- 1991-pres Consultant with Alpura Koreco, Inc. (a Nestle Corporation), Switzerland
- 1992-pres Consultant with STORA (Pulp and Paper Company) Sweden
- 1989-91/  
1993-pres Consultant with DuPont, U.S.A.

**Miscellaneous:**

Frequent consulting missions for most major Swedish pulp and paper industries and for many industries in Finland, Norway and Denmark

Consultations with many American and Australian industries such as West Waco, Boise Cascade, Crown Zellerbach, Exxon (a thorough and long commitment), several American chemical companies, particularly in the field of biocides, Australian paper manufactures, Australian sugar companies etc.

***Committee Memberships:***

- 1966-67 Member, UNEP/UNESCO/ICRO Panel for Microbiology - Advisory Committee for Environmental Microbiology in Waste Utilization
- 1977-79 Member, Committee for Improving the Use of Woody Materials, Swedish Board for Technical Development
- 1979-80 Member, Working Group for Chemicals from Agro and Forestry Raw Material, Royal Swedish Academy of Engineering Sciences
- 1979-82 Swedish Representative, European Corporation in Scientific and Technical Research (COST)
- 1982-84 Chairman, Committee on "Better Forest Trees by Vegetative Methods", Royal Swedish Academy of Engineering Sciences
- 1983 European Moderator, World Wide Computer Conference, "Bioconversion of Lignocellulose for Fuel, Fodder and Food Needed for Rural Development in Poor Countries"
- 1983-85 Member, Science Advisory Board, Michigan Biotechnology Institute, East Lansing, MI

- 1985-88      Chair, Seller's Committee, International Academy of Wood Science
- 1982-1988    Member of the Swedish Natural Science Research Council for the Evaluation of Grant Applications in the Energy Field, 1982-1988;
- 1991-pres    Member, International Academy of Wood Science, Fellowship Committee
- Member of several committees within the Swedish pulp and paper industries regarding technical questions
- Responsible for the programs of several national and international scientific conferences and congresses
- 1993, June    Organized "Symposium of Wood Rotting Fungi" at the Annual Meeting of the Mycological Society of America, Athens, GA.

#### **University Service (University of Georgia)**

- 1988          Appointed member of Graduate Faculty
- 1990          Member, Committee for evaluation of research professor appointments
- 1992          Member, Committee for evaluation of Institute of Natural Resources
- 1992          Member, Search and Screening Committee - Endowed Chair in Water Quality
- 1992          Member, Committee for Cooperation with Georgia Institute of Technology, Institute of Paper Science and Technology - The Herty Foundation and The Governor's Office for the Georgia Pulp and Paper Initiative
- 1992-93      Member, Research Awards Committee
- 1993          Chairman, Committee on Biotechnology, Department of Biochemistry

#### **Editorial and Referee Experience**

- Member, Advisory Board, *Cellulose Chemistry and Technology*
- Member, Advisory Board, *Holzforschung*
- Member, Editorial Board, *Advances in Biochemical Engineering/Biotechnology*

#### **Referee for the following journals:**

- Applied and Environmental Microbiology*
- Biochemistry*
- Plant Molecular Biology*
- Acta Chemica Scandinavia*
- Physiologia Plantarum*
- Journal of General Microbiology*
- Archives of Microbiology*
- Enzyme/Microbial Technology*
- Biotechnology/Bioengineering*
- European Journal of Biochemistry*
- Biotechnology and Applied Biochemistry*
- Environmental Toxicology and Water Quality*
- Holzforschung*
- Science*

**Referee for the following funding agencies:**

National Science Foundation (NSF)  
U.S. Department of Energy (DOE)  
U.S. Department of Agriculture (USDA)  
International Foundation for the Advancement of Science  
Governmental Research Associations of Australia, Canada, Finland, Israel and Sweden  
Swedish Natural Science Research Council

**Miscellaneous:**

Member of numerous Ph.D. and Master's committees; Ph.D. - examiner in Sweden, France, England, and Switzerland Evaluation of candidates for tenure and promotion at numerous universities worldwide

**Miscellaneous publications:**

Eriksson, K.-E.L., (1976), Delignification of Wood Chips by Mutant White-rot Fungi, Proceedings of the Symposium, Biological Delignification, Present Status and Future Direction, p. 5-30, Weyerhaeuser Headquarters, Seattle, Washington.

Eriksson, K.-E.L. (1986), Breakthrough for Biotechnology in the Forest Industries (In Swedish), *Svensk Papperstidning*, **89**(12):28-32.

Eriksson, K.-E.L. (1987). Breakthroughs in Biotechnology Show Promise for Paper Industry, *Pulp & Paper*, 114-117.

Eriksson, K.-E.L. and Strand, R. (1987). Wood Production in Privately owned Forests {In Swedish}. *Svensk Trävaru- och Pappersmassetidning*, 7:16-18.

Eriksson, K.-E.L. (1989). Biotechnology in the Pulp and Paper Industry: Almost 300 on the Fourth Conference on Biotechnology (In Swedish). *Svensk Papperstidning*, **92**(18):42-46.

Eriksson, K.-E.L. (1992). Biotechnology Will Play Key Role in Future Non-Chlorine Bleaching. Editorial in *Pulp & Paper*, 149-150.

Eriksson, K.-E.L. (1992). Biotechnology on it's way to Commercialization. (In Swedish) *Svensk Papperstidning*, **95**(16):30-33.

Yang, J.L., Singh, R.P., and Eriksson, K.-E.L. (1993). Bleaching of Kraft Pulps with the EnZone Process. *Proceedings Non-Chlorine Bleaching Conference*, Hilton Head, S.C., March 14-18.

## **Honors and Awards**

- 1968-69 American-Scandinavian Foundation Fellowship, California Institute of Technology
- 1968-69 Fulbright Fellowship, California Institute of Technology
- 1978 Appointed Professor by the Swedish Government
- 1982 The Gadolin Honorary Lecture, Turku, Finland
- 1985 Received the International Wallenberg Prize (joint award with Dr. T.K. Kirk)
- 1986 Cameron-Gifford Annual Lecture, University of Newcastle upon Tyne, England
- 1993 Fellow Tau Chapter of PHI BETA DELTA, Honor Society for International Scholars

## **Member of Academies:**

- 1978-pres The Royal Swedish Academy of Engineering Sciences  
Chairman, Forestry and Forest Industry Sciences Section (1982-85)  
Member of the Board (1982-85)
- 1978-pres The International Academy of Wood Science
- 1987-pres The World Academy of Art and Science

## **Professional Memberships:**

The Swedish Chemical Society  
The Swedish Society for Biochemistry and Molecular Biology  
The Swedish Association of Pulp and Paper Engineers  
American Association for the Advancement of Science  
American Society for Microbiology  
Technical Association of the Pulp and Paper Industry (TAPPI)

## **Patents and Patent Applications**

Method for producing cellulose pulp, patented in several countries (US pat 3962033).

Way to use blood serum for growth of fungi producing polysaccharide and lignin degrading enzymes, Swedish Patent 7605860-1.

A method for purifying endo-glucanases, Swedish Patent SE 8304799-3.

Method of obtaining cellulase deficient strains of white-rot fungi, patent applications in approximately 20 countries, Intl. Patent PCT/SE85/00358.

A method for reutilization of enzymes for hydrolysis of lignocellulosic materials, Swedish Patent SE 8701434-6.

A method for biomimetic bleaching of pulp, Swedish Patent, 1989.

Process for Bleaching Pulp, UGA472 New Patent Application, Reference #U650/72819.

## **Research Grants**

Received repeated grants from the Swedish Board for Technical Development, from the Swedish Natural Science Research Council, from private research foundations, from the Nordic Found for Industrial Development and from the Swedish Board for Energy Conservation

### **Current Support:**

10/1/89-9/30/94, National Council of the Paper Industry for Air and Stream Improvement (NCASI), "Development of a New Bleaching Technique," \$91,440 (Year 1); \$87,438 (Year 2); \$113,000 (Year 3); \$110,176 (Year 4); \$42,500 (Year 5).

3/1/92-2/28/95, Nestle's (Alpura Koreco) "Enzymatic Degradations of SOTEC," \$117,648.

7/1/92-6/30/95, U.S. Department of Energy, "Mechanisms of Lignin Biosynthesis During Xylogenesi", \$107,500 (Year 1); \$97,000 (Year 2); \$99,000 (Year 3).

7/1/92-6/30/97, Agricultural Research Service, "Biological Delignification of Lignocellulose for Enhanced Bioavailability," \$13,000 (Year 1); \$48,000 (Year 2 - Joint Award with Dr. Danny Akin, USDA).

07/01/93-6/30/94, Georgia Research Alliance, Joint Award with J. Yang, S.E. Low, (Department of Agricultural Engineering) J. F. Hsieh, Georgia Tech \$453,000.

7/1/93-6/30/94, Biotechnology Award, University of Georgia "Development of Biotechnology for Deinking of Recycled Fibers," \$35,000.

7/1/93-6/30/94, Biotechnology Award, University of Georgia "Industrial application of Vanillate Hydroxylase and Hydroxyquinol Dioxygenase from *Phanerochaete chrysosporium*," \$19,800 (Joint Award with Dr. D. Kurtz, Department of Chemistry).

7/1/93-6/30/94, Biotechnology Award, University of Georgia "A Regulated Promoter for Homologous and Heterologous Gene Expression in Streptomyces," \$20,700 (Joint Award with Dr. J. Westphaling, Department of Genetics).

7/1/93-6/30/94, Georgia Pulp and Paper Initiative Fiber Supply Group, "Improved Fibers for Pulp and Paper Production Through Genetic Engineering of Southern Tree Species" \$78,820 (with J.F.D. Dean, S.A. Merkle, R.B. Meagher and R.J. Dinus).

7/8/93, Donation of Pulp Mill Model and Pulp and Paper Analytical Laboratory Equipment from the Alabama River Pulp Company. Estimated Value - \$270,000.

09/01/93-03/1/96, US Department of Agriculture (USDA), "Production of Thermostable Xylanases for Pulp Bleaching" \$160,000.

### **Grants Pending**

07/01/94-06/30/95, National Science Foundation (NSF), "What is the Function of Cellobiose Oxidoreductases in White-Rot Fungi?" (Pending - Asking for \$344,984)

## Business Experience

1967-78	President and Owner, AB Erikslunds Ångsåg, Construction Company, Stockholm, Sweden
1972-75	Member of the Board, Norrlandshus (major producer of pre-fabricated houses in Sweden)
1986-88	Member of the Board, Kebo (major supplier of chemicals to laboratories and industries in Sweden)
1989-Present	Development of the Subdivision "Olde Lexington Gardens," Athens, GA., Joint venture with Saye Construction, Inc. Athens, GA.
1991-Present	Board Chairman South Eastern United States (SEUS) Land Exchange, Inc. Athens, GA.

## Lectures (mostly invitational)

1. FEBS 2nd meeting, Vienna 1965, "Isolation and Characterization of Cellulolytic Enzymes from the Rot Fungus *Stereum sanguinolentum*"
2. FEBS 3rd meeting, Warsaw 1966, "A Study of Some Structural Properties of a Fungal Cellulase"
3. Gordon Research Conference on Chemistry and Physics of Paper, Crystal Inn, Crystal Mountain, Washington, USA 1968, "Enzymatic Attack on Surfaces of Wood Fibers"
4. Cellulases and their Applications, Atlantic City, New Jersey, USA 1968. American Chemical Society "New Methods for the Investigation of Cellulases"
5. The Symposium Mikrobiologiske skadevirkinger på materialer og deres bekæmpelse, Bergen 1970, "Mikrobiologiska problem i massa- och pappersindustrin"
6. The 2nd International Biodeterioration Symposium, Lunten, Holland 1971 "Extracellular Enzyme System Utilized by the Fungus *Chrysosporium lignorum* for the Breakdown of Cellulose"
7. FEBS Special Meeting on Industrial Aspects of Biochemistry, Dublin, Ireland 1973, "Isolation, Purification and Characterization of Fungal Enzymes in Cellulose Degradation"
8. The 2nd International Congress of Plant Pathology, Minneapolis, Minnesota 1973, organizer and chairman in Wood Products Pathology-Symposium 4: The Enzymatic Mechanisms of the Deterioration Processes, "The Enzymatic Mechanisms of Cellulose Degradation caused by the Rot-Fungus *Chrysosporium lignorum*"
9. Forest Products Laboratory, Madison, WI 1973, "Separation and Characterization of Endo-Glucanases Produced by the White-rot Fungus *Chrysosporium lignorum*"
10. University of Arizona, Tucson, AZ 1973, "Enzyme Mechanisms Involved in Cellulose Degradation by the White-rot-Fungus *Chrysosporium lignorum*"

11. Louisiana State University, Baton Rouge, LA 1973, "Conversion of Waste From the Forest Industry into Protein"
12. North Carolina State University, Raleigh, NC 1973, "Enzyme Mechanisms Involved in Cellulose Degradation by the White-rot-Fungus *Chrysosporium lignorum*"
13. The Technology Week of the Paper Industry, Oslo 1973, "Microbiological Project at The Swedish Forest Products Laboratory"
  - a) Fermentation of Waste from the Forest Industries
  - b) Biological Pulp
14. British Paper and Board Industry Federation Symposium: Utilization of Wastes, Manchester 1975, "Conversion of Cellulosic Waste into Protein by a Symbiotic Process"
15. Symposium on Enzymatic Hydrolysis of Cellulose, Aulanko, Finland 1975, "Enzyme Mechanisms Involved in the Degradation of Wood Components"
16. Meeting of the Finnish Paper Engineers, Helsinki, Finland 1975, "Biological Production Processes Within the Forest Industries"
17. Together with Professor Peter Albersheim, University of Colorado, Boulder, Colorado, USA and Professor D.A. Rees, England, Organizer and Chairman of the Symposium, Molecular and Biological Aspects of Cell Walls, New York 1976 (Celebration of the 100th Anniversary of the American Chemical Society), "Enzyme Mechanisms Involved in Fungal Degradation of Wood Components"
18. Research Association for the British Paper and Board Seminar Impact of Biochemistry on Papermaking Technology of the Future, England, 1976 "Delignification of Wood by Microorganisms"
19. IFIAS/UNEP-UNESCO-ICRO Workshop, Örsundsbro, Sweden. Utilization of Lignocellulosic Materials, 1976, "Enzyme Mechanisms Involved in the Degradation of Wood Components"
20. Weyerhaeuser Corporate Headquarters, Seattle, WA 1976, Symposium of Biological Delignification, Present Status-Future Directions, "Delignification of Wood Chips by Mutant White-rot Fungi" Symposium Proceeding, page 5-30
21. Institute of Microbiology, Prague, Czechoslovakia, 1976 "Possibilities for Conversion of Waste Lignocellulosic Materials Into Protein"
22. University of Lublin, College of Agriculture, Lublin, Poland, 1976, "Enzyme Mechanisms Involved in Cellulose Degradation by the White-rot Fungus *Sporotrichum pulverulentum*"
23. Symposium on Cell Wall Biochemistry Related to Specificity in Host-Plant Pathogen Interactions, Tromsø, Norway 1976. Key-note speaker "The Enzymatic Degradation of Wood Components"

24. American Chemical Society Centennial Meeting, San Francisco, USA 1976, "Enzyme Mechanisms Involved in Cellulose Hydrolysis by the White-rot Fungus *Sporotrichum pulverulentum*"
25. EUCEPA-Symposium in Bratislava, Czechoslovakia 1976, "Conversion of Waste Fibers into Protein"
26. International Symposium on Bioconversion of Cellulosic Substances into Energy, Chemicals and Microbial Protein, New Delhi, India 1977, Lectures:
  - a) "Enzyme Mechanisms Involved in Fungal Degradation of Wood Components"
  - b) "Conversion of Waste Fibers into Protein"
27. European Seminar on Biological Solar Energy Conversion System, Grenoble, France 1977, "Enzyme Mechanisms involved in Fungal Degradation of Lignocellulosic Materials"
28. UNESCO/UNEP/IFIAS Regional Seminar on Microbiological Conversion Systems for Food and Fodder Production and Waste Management, Kuwait 1977, "Conversion of Lignocellulosic Materials into Protein"
29. Symposium, Lignin Biodegradation: Microbiology, Chemistry and Applications, Madison, Wisconsin, USA 1978, "Biochemical Pulping"
30. Symposium Hydrolysis of Cellulose - Mechanisms of Enzymatic and Chemical Catalysis, Appleton, Wisconsin, USA 1978, "Enzyme Mechanisms Involved in Cellulose Degradation by the White-rot Fungus *Sporotrichum pulverulentum*"
31. XII International Congress of Microbiology, Munich, 1978, "Important Enzymes in Cellulose Degradation"
32. Unilever Bedford, England, 1978, "Possibilities for Biotechnology Based on Lignocellulosic Materials"
33. British Society for General Microbiology, Aberdeen, 1978. Plenary speaker "Biosynthesis of Polysaccharides"
34. 27th International Congress of Pure and Applied Chemistry, Helsinki, Finland 1979, "Developments of Biotechnology Within the Pulp and Paper Industries"
35. Institute of Polymer Chemistry, Invitation by the Academy of Science, East Germany, 1979, "Degradation of Lignocellulosic Materials by White-rot Fungi"
36. Institute of Microbiology, Minsk, USSR, 1979, Invitation by the Academy of Science, "Enzymes Mechanisms Involved in Cellulose Degradation by the White-rot Fungus *Sporotrichum pulverulentum*"
37. Bach Institute, Moscow, USSR, 1979, Invitation by the Academy of Science, "Enzyme Mechanisms Involved in Cellulose Degradation by the White-rot Fungus *Sporotrichum pulverulentum*"

38. University of Pushchino, Pushchino, USSR, 1979, Invited by the Academy of Science, "Enzyme Mechanisms in Cellulose Degradation and Possibilities for Biotechnology Based on Lignocellulosic Materials"
40. Workshop on Single Cell Protein Production, Institute of Biotechnology, Jülich, West Germany, 1979, "Degradation of Lignocellulosic Materials by the White-rot Fungus *Sporotrichum pulverulentum*"
41. The Jubilee Conference Towards the Century of Biotechnology, Trondheim, Norway, 1980. Plenary speaker "Biotechnology Based on Lignocellulosic Materials"
42. 10th International Symposium on Carbohydrate Chemistry, Sydney, Australia, 1980. Plenary speaker "Fungal Degradation of Wood Components"
43. 31st Conference of the Gesellschaft für Biologische Chemie, The Biochemistry of Phenolic Compounds in Higher Plants, Seigerhöhe, West Germany, 1980, "Degradation of Lignin and Lignin Model Substances by Microorganisms with Special Reference to White-rot Fungi"
44. The National Science Foundation (NSF) and Department of Energy (DOE) Conference, Trends of the Biology of Fermentation for Fuels and Chemicals, Brookhaven National Laboratory, Long Island, USA, 1980, "Cellulases of Fungi"
45. Nordic Mycological Symposium, Uppsala, Sweden, 1980 "Biological Degradation of Lignin"
46. Lehigh University, Bethlehem, PA, 1980, "Conversion of Lignocellulosic Materials into Useful Products"
47. Cuban Sugar Cane By-products Research Institute (ICDCA), Havana, Cuba, 1981, "Enzyme Mechanisms Involved in Cellulose and Lignin Degradation"
48. Cuban Sugar Cane By-products Research Institute (ICDCA), Havana, Cuba, 1981, "Ethanol Production Based on Lignocellulosic Waste Materials"
49. ICDCA, Science Advisory Board, Havana, Cuba, 1981, "Possibilities for Biotechnology Based on Lignocellulosic Materials"
50. National Center for Scientific Research (CNIC) Havana, Cuba, 1981, "Degradation of Lignocellulosic Materials by White-rot Fungi - Enzyme Mechanisms"
51. University of Gothenburg, Sweden, Department of Marine Biology, 1981, "Basic and Applied Research Concerning Microbial Degradation of Lignocellulosic Materials"
52. Bommersvik, Sweden (Invited lecture for Part of the Swedish Government), 1981, Invited Lecture, "Biotechnology within Forestry and Forest Industries"
53. International Symposium, Wood and Pulp Chemistry, Stockholm Sweden, 1981 "Microbial Degradation of Cellulose and Lignin"

54. LO/TCO (Swedish Labor Organizations) Hearing on Biotechnology, Stockholm, Sweden, 1981, "Biomechanical Pulping/Closing of Mechanical Pulp and Paper Mills/Ethanol Production Based on Lignocellulosic Materials"
55. Technology Week of the Norwegian Forest Industry, Oslo, Norway, 1981, "Possibilities for Biotechnology in the Forest Industries"
56. FEBS 14th Meeting, Edinburgh, Scotland, 1981, "Biotechnology of Cellulose and Wood Products"
57. Symposium, Biotechnology in the Pulp and Paper Industry, Pointe Claire, Quebec, Canada, 1981, lectures:
  - a) The Present Status of Biological Pulping
  - b) Process for Closing a Paper Mill by the Aid of a Fungal Fermentation Process
  - c) Biotechnology Within the Forest Industries
58. OECD/COST Workshop, Bundesforschungsanstalt, Braunschweig, West Germany, 1981, "Microbial Decomposition of Lignin"
59. Symposium, Production of Fuel from Biomass, Sophia Antipolis, France, 1981, "Possibilities for Enzymic and Biological Saccharification of Cellulose"
60. The Royal Institute of Technology, Stockholm, Sweden, 1982, lectures:
  - a) Biosynthesis of Cellulose
  - b) Biodegradation of Cellulose
61. Finish Pulp and Paper Research Institute, Helsinki, Finland, 1982, "Possibilities for Biotechnology in the Forest Industries"
62. Symposium, Lignin Biodegradation, Toulon, France, 1982, "Recent Advances in the Biodegradation of Lignins"
63. "Gadolin-Day" at the Chemical Society in Åbo, Finland, 1982, presented the honorary lecture "Biotechnology and the Forest Industries"
64. Gordon Research Renewable Resources Conference, New Hampshire, USA, 1982, "Biotechnology in the Pulp and Paper Industry"
65. Symposium on Biotechnology, Umeå, Sweden, 1982, "Possibilities for Biotechnology Based on Lignocellulosic Materials"
66. International Symposium on Ethanol from Biomass, Winnipeg, Canada, 1982, plenary lecture "Advances in Enzymatic Degradation of Lignocellulosic Materials"
67. Special Invitation to the Finnish-Russian Symposium Tvärminne, Finland, 1982, plenary lecture "Recent Advances in Cellulose and Lignin Degradation"

68. The Swedish Cellulose Company (SCA), Sundsvall, Sweden, 1982, "Possibilities for Closing of the White Water System of Chemical Thermomechanical Pulping Operations"
69. Board of the Swedish Forest Products Research Institute, Stockholm, Sweden, 1982, "Degradation of High Molecular Weight Chlorinated Lignins"
70. Institute of Microbiology, Department of Mycology (Invitation by the Academy of Science, Czechoslovakia) 1983, "Biochemical, Microbial and Biotechnological Research at the Swedish Forest Products Research Laboratory"
71. The Swedish Association of Pulp and Paper Engineers Annual Meeting, Stockholm, Sweden, 1983, "Biochemical and Microbial Research at the Swedish Forest Products Research Laboratory-Overview and New Results"
72. Symposium, Biomass as a Source of Industrial Chemicals, Paris, 1983. Special invited lecture, "Lignin Degradation and Possible Industrial Applications of Lignin Degrading Fungi"
73. University of Sofia, Sofia, Bulgaria, (Invitation by the Academy of Science, Bulgaria), 1983, Lectures:
  - a) Enzyme Mechanisms Involved in Cellulose Degradation
  - b) Enzyme Mechanisms Involved in Lignin Degradation by White-rot Fungi
  - c) Possibilities for Biotechnology Based on Lignocellulosic Materials
74. Symposium, Biotechnology in the Pulp and Paper Industry, London, England, 1983, "Advances in Microbial Delignification" (co-author of two more lectures in this conference)
75. University of Stockholm, Department of Microbiology, Stockholm, Sweden, 1983, "Enzyme Mechanisms Involved in Fungal Degradation of Cellulose and Lignin"
76. Swedish Fuels Technology (Department of Energy), Stockholm, Sweden, 1983, "Enzymatic Hydrolysis of Wheat Straw after Steam Explosion Pretreatment"
77. Lignocellulose Biodegradation Conference, Little-Hampton, England, 1983. Plenary lecture "Enzymes Involved in Cellulose and Lignin Degradation"
78. The Ekman Days, Stockholm, Sweden, 1984, "Slime Problems in the White Water Systems of Pulp and Paper Mills"
79. University of Umeå, Department of Applied Cell and Molecular Biology, Umeå, Sweden, 1984, "Enzymes Mechanisms Involved in the Degradation of Cellulose and Lignin, by White-rot Fungi"
80. Cuban Sugar Cane By-products Research Institute (ICDCA), Havana, Cuba, 1984, "Microbial Delignification of Sugar Cane Bagasse to be Upgraded for Cattle Feed and Fiber Production"

81. University of Grenoble, Grenoble, France, 1987, "Microbial and Enzymatic Degradation of Wood and Wood Components"
82. National Chemical Laboratory, Pune, India, (United Nations Industrial Development Organizations (UNIDO), Consultant with NCL Pune), 1984, Lectures:
  - a) Microbial Delignification
  - b) Utilization of Polysaccharides in Lignocellulosic Materials for Ethanol Production
83. Biotechnology in Forest Science Workshop organized by the Science Council of Canada, Vancouver, Canada, 1985, "Microbial Degradation of Lignocellulosic Materials"
84. IEA/CPD/2 Symposium on Pretreatment of Lignocellulosic Materials, Rotorua, New Zealand, 1985, "Enzymic Saccharification of Pretreated Wheat Straw"
85. IEA/CPD/2 Symposium on Pretreatment of Lignocellulosic Materials, Rotorua, New Zealand, 1985, "Assays of Cellulases"
86. Bergvik Chemistry, STORA, Sandarna, Sweden, 1985, "Possibilities for Biotechnology Based on Crude Tall Oil"
87. Biotechnology Seminar, Pulp and Paper Research Institute of Canada (PPRIC), Pointe Claire, Canada, 1985, "Biotechnology in the Pulp and Paper Industry"
88. International Symposium on Wood and Pulping Chemistry, Vancouver, Canada, 1985, "Biological Pulping"
89. The Marcus Wallenberg Prize lecture, Falun, 1985, "Wood Conversion by Fungi and Their Enzymes"
90. The Marcus Wallenberg Foundation Symposium, Falun, 1985, "Potential Use of Microorganisms in Wood Conversion"
91. University of Grenoble, Grenoble, France, 1985, "Lignin Degradation by White-rot Fungi"
92. Institute for Polymer Chemistry, Invitation by the Academy of Science, East Germany, 1985, "Microbial and Enzymatic Degradation of Wood and Wood Components"
93. EKA Chemistry, Bohus, Sweden, 1985, "Possibilities for a Future Biotechnological Use for  $H_2O_2$ "
94. Swedish Parliament, (MPs and Scientists), Stockholm, Sweden, 1985, "Possibilities for Biotechnology in Forestry and Forest Industries"
95. University of Stockholm, Department of Biochemistry, 1985, "Microbial Conversion of Lignocellulosic Materials"

96. Swedish University of Agriculture, Department of Forest Science, Uppsala, Sweden, 1986, "Enzymes Involved in Cellulose and Lignin Degradation by White-rot Fungi"
97. Sydkraft (Major Swedish Power Producing Company), Malmö, Sweden, 1986, "Alternative Use of Fast Growing Hardwood Species Planted for Energy Production"
98. Cuban Sugar Cane By-products Research Institute (ICDCA), Havana, Cuba, 1986, "Microbial Delignification"
99. Cuban Sugar Cane By-products Research Institute (ICDCA), Havana, Cuba, 1986, "Technical Requirements for Delignification of Bagasse in Large Scale"
100. National Center for Scientific Research (CNIC) Havana, Cuba, 1986, "Genetic Aspects on Obtaining Improved Cell-mutants"
101. Annual Meeting of German Papermakers, Baden-Baden, West Germany, 1986, "Microbial Delignification of Lignocellulosic Materials"
102. The Royal Society, London, 1986, "Production of  $H_2O_2$  in *Phanerochaete chrysosporium* during Lignin Degradation"
103. Rütgerswerke AG, Duisburg, Väst-Tyskland, 1986, "Lignin-Based Biotechnology - Possibilities for Production of Phenolic Compounds from Waste Lignins"
104. The University of Sofia, Bulgaria, 1986, "Enzyme Mechanisms Involved in Cellulose and Lignin Degradation"
105. The University of Sofia, Bulgaria, 1986, "Biotechnology Based on Wood and Wood Components"
106. Biocarb, Lund, Sweden, 1986, "Microbial and Enzymatic Conversion of Wood and Wood Components"
107. Scottish Branch of the Society for Microbiology, Paisley College, Paisley, Scotland, 1986, "Microbial Delignification of Lignocellulosic Materials"
108. The University of Newcastle upon Tyne, Newcastle, England, invited to present the 1986 Cameron-Gifford lecture, "Biotechnology Based on Lignocellulosic Materials"
109. Department of Energy, Ethanol Conference, Lund, Sweden, 1987, "Enzymatic Saccharification of Pretreated Lignocellulosic Materials"
110. Royal Institute of Technology, Stockholm, Sweden, 1987, "Synthesis of Polysaccharides"
111. The American Chemical Society Meeting, Denver, Colorado, USA, 1987, "Enzymatic Hydrolysis of Steam-Exploded Aspen and Wheat Straw"

112. The Solar Energy Research Institute, Golden, Colorado, USA, 1987, "Enzyme Mechanisms Involved in Lignin Degradation - Microbial Delignification"
113. The University of Georgia, Athens, Georgia, USA, 1987, "Microbial, Biochemical and Biotechnical Aspects on the Utilization of Wood and its Components"
114. The University of Florida, Gainesville, Florida, USA, 1987, "Microbial, Biochemical and Biotechnical Aspects on the Utilization of Wood and its Components"
115. Royal Institute of Technology, Department of Biochemistry, 1987, "Enzyme Mechanisms Involved in the Degradation of Cellulose and Lignin"
116. Royal Swedish Academy of Engineering Sciences, Symposium on the Benefits of the Society from Biotechnology, Stockholm, Sweden 1987, "Biotechnology in the Forest Industries"
117. ETH, Zürich, Schweiz, 1987, "Microbial Biochemical and Biotechnical Aspects on the Utilization of Wood and its Components"
118. Third Annual Northeast Symposium on Forest Products and Wood Science, The University of Maine, Orono, Maine, 1987, "Recent Developments in Biotechnology in the Pulp and Paper Industry"
119. International Conference, Biochemistry and Genetics of Cellulose Degradation, Institute Pasteur, Paris, France, 1987, "Microbial Delignification - Basics, Potentials and Applications"
120. The University of Salta, Argentina, 1987, "Bioconversion of Lignocellulosic Materials"
121. 3rd Seminar on Enzymatic Hydrolysis of Biomass, Maringa, Brazil, 1987, "Biopulping"
122. Seminar, Ten Years of Swedish-Cuban Science Cooperation, Havana, Cuba, 1988, "Microbial Delignification of Bagasse for Feed and Fiber"
123. Royal Institute of Technology, Stockholm, Sweden 1988, "Enzymatic Degradation of Cellulose and Lignin - Biotechnology in the Forest Industries"
124. Voest-Alpine, Linz, Austria, 1988, (Inauguration Speech for Part of the Austrian Government and Special Guests at the Opening of Voest-Alpine's Biomass Conversion Plant "Possibilities for Biotechnology Based on Lignocellulosic Materials"
125. The Board of Regents, Atlanta, Georgia, 1988, "What I Will Do at UGA!"
126. Forest Products Laboratory, Madison, Wisconsin, 1989 "Basic Research and Biotechnical Developments for the Pulp and Paper Industry"
127. The Institute of Paper Chemistry, Appleton, Wisconsin, 1989 "New Developments of Biotechnology for the Forest Industries"

128. Lecture in Galway, Ireland, 1989, "A Biotechnological Approach to Pulp Bleaching",
129. Presented the International Academy of Wood Science Annual Lecture, Raleigh, North Carolina, 1989, "Biotechnology in the Pulp and Paper Industry"
130. Biotrek Georgia '89, Atlanta, Georgia, 1989 "Introduction to Biotechnology in the Pulp and Paper Industry",
131. The University of Georgia, talk to Georgia State Legislators, 1989 "Some Examples of Biotechnology for the Pulp and Paper Industry"
132. University of Georgia, Department of Botany, 1989, "Development of cellulase-less mutants from the white-rot fungus *Phanerochaete chrysosporium*"
133. The Institute of Paper Science and Technology, Georgia Institute of Technology, Atlanta, Georgia, 1989. Presentation of current research and possibilities for cooperation with IPST scientists.
134. Georgia Senate Ethanol Study Committee hearing, Atlanta, Georgia, 1989. Presentation of possibilities for ethanol production from lignocellulosic waste.
135. Georgia Institute of Technology, Atlanta, Georgia, 1989. Presentation of current research.
136. The Unicoi Conference Center, 1989. Presentation of current research.
137. University of Georgia, Department of Agricultural Engineering, Athens, Georgia, 1990, "Development of Biotechnology for Agriculture and the Pulp and Paper Industry"
138. DuPont Corporation, Wilmington, Delaware, 1990, "Biotechnology in the Pulp and Paper Industry"
139. Northeast Georgia Branch of the American Chemical Society, Athens, Georgia, 1990, "Development of Biotechnology for Agriculture and for the Pulp and Paper Industry"
140. U.S./Australian/New Zealand Fiber Workshop, Athens, Georgia, 1990, "Biological Delignification for Improved Utilization"
141. University of Georgia, Complex Carbohydrate Research Center, NIH Site Visit, 1990, "Presentation of Current Research"
142. International Center for Genetic Engineering and Biotechnology, Lignin Biodegradation and Practical Utilization, Colloquium, Trieste, Italy, 1990, Concluding Remarks.
143. Fifth in a series of Colloquia on Pulp and Paper Mill Effluents, Microbial Degradation of Organochlorine Compounds, University of Toronto, Canada, 1990. "Purification of Waste Bleach Waters"

144. Presentation to Funding Committee of the National Council of the Paper Industry for Air and Stream Improvement, San Francisco, CA, "Development of a New Bleaching Technique"
145. Institute of Paper Science and Technology, Atlanta, GA 1990, "Purification of Waste Bleach Water"
146. University of Georgia, Complex Carbohydrate Research Center, Athens, Georgia, 1990, "Development of Biotechnology for the Pulp and Paper Industry and for Agriculture"
147. Kimberly-Clark Research Center, Roswell, Georgia, 1990, "Possibilities for Biotechnology in the Pulp and Paper Industry"
148. Nalco Chemical Company, Naperville, Illinois, 1990, "Possibilities for Biotechnology in Pulp and Paper Manufacture"
149. Annual AIChE Meeting, Chicago, Illinois, 1990, "Development of New Technique for Purification of Waste Bleach Waters"
150. Mead Company, Stevenson, Alabama, 1990, "Possibilities to Obtain Increased Freeness and Higher Productivity by Treatment of Recycled Fibers with Enzymes"
151. TAPPI Environmental Conference, San Antonio, Texas, 1991, "New Development for Purification of Waste Bleach Waters"
152. University of Texas, Department of Botany, Austin, Texas, 1991, "Microbial Delignification as One Example of Biotechnology for the Pulp and Paper Industry"
153. VOEST-ALPINE Industrienlagenbau Gesellschaft, Linz, Austria, 1991, "Bio-Bleaching of Pulp"
154. Swedish Pulp and Paper Research Institute, Stockholm, Sweden, 1991. Invited Lecture, "Biotechnology in Forest Trees and Forest Industries,"
155. TAPPI-API Paper Industry Challenges Conference, Baton Rouge, LA. 1991. Invited Lecture, "Biotechnology and Environmental Issues"
156. Nordic Fund for Technology and Industrial Development, Conference on Application of Thermophilic and Psychrophilic Organisms and Their Enzymes, Oslo, Norway, 1991. Invited Lecture, "The Use of Enzymes in the Pulp and Paper Industry"
157. University of Georgia, Department of Botany/Plant Pathology Course 834, Athens, Georgia, 1991. Invited Lecture, "Biotechnological Applications of Fungi in the Pulp and Paper Industry"
158. University of Georgia, Department of Food Science, Athens, Georgia, 1992. Invited Lecture, "Enzyme Mechanisms Involved in the Degradation of Wood Components"

159. Non-Chlorine Bleaching Conference, Hilton Head, SC, 1992. Invited Lecture, "Enzyme Prebleaching"
160. Second Brazilian Symposium on the Chemistry of Lignins and Other Wood Components: Technological Developments and Environmental Concern, Campinas, Brazil, 1992, "Development of a New Technique for Pulp Bleaching"
161. University of Georgia, Department of Microbiology, Athens, Georgia, 1992. Invited Lecture, "Importance and Role of Xylanases in the Pulp and Paper Industry"
162. University of Georgia, Lecture in Food Science, Ecology Class. Presented, April 27, 1992. "Purification of Waste Waters from Pulp and Bleaching Operations"
163. Tuckston Methodist Church, Ecology Lecture Series. Athens, GA. Presented, May 6, 1992. "The Pulp and Paper Industry and the Environment"
164. Forestry and Forest Products Research Institute, Tsukuba, Japan, 1992. "Certain Aspects on Lignin Biosynthesis in Forest Trees"
165. Biotechnology in the Pulp and Paper Industry, Fifth International Meeting, Kyoto, Japan, 1992. Keynote lecture, "Possible Ways to Reduce Environmental Impact From Pulp Bleaching"
166. Department of Forest Products, Faculty of Agriculture, University of Tokyo, Tokyo, Japan, 1992. Invited Lecture, "Market Pressures and Environmental Concern Lead to Development of Biotechnology-Based Pulp Bleaching,"
167. NOVO/Nordisk A/S, Copenhagen, Denmark, 1992. "Possibilities for Technical Utilization of the Enzymes Cellobiose Oxidase (CBO) and Cellobiose:Quinone Oxidoreductase (CBQ)"
168. Rotary, Kungshamn, Sweden, July, 1992, "Biotechnology in Pulp and Paper Production"
169. STORA (The Worlds Third Largest Pulp and Paper Company), Falun, Sweden, August, 1992, "Future Pulp Bleaching Processes"
170. Merck, Inc. Biotechnology Section, Elkton, VA. "Degradation of Lignin and Other Aromatic Compounds by the White-Rot Fungus *Phanerochaete chrysosporium*," Invited Lecture, September 20, 1992.
171. TAPPI-API Conference, Paper Industry Research Challenges, "Biotechnology and Environmental Issues, Greenbay, WI, October 14-16, 1992.
172. Warnell School of Forestry, University of Georgia. "Possibilities for Biotechnology in the Forest Industries." 1992.

173. National Laboratory for Industrial Engineering Technology, Department of Chemical Industry, presented 4 lectures in Lisbon, Portugal, November 5-6, 1992:
  1. "Enzyme Mechanisms Involved in the Degradation of Cellulose, Hemicelluloses and Lignin."
  2. "The use of Cell Mutants of White-rot Fungi for Delignification of Plant Materials."
  3. "Three Possible Ways to Decrease Environmental Impacts from Bleaching of Wood Pulp."
  4. "Possibilities for Biotechnology in the Pulp and Paper Industry."
174. Center for Industrial Research, Conference on Biotechnology in the Pulp and Paper Industry, presentation of two lectures in Oslo, Norway, November 10, 1992.
  1. "Biotechnology for Prevention of Environmental Impact of Waste Waters from Forest Industries."
  2. "Future Possibilities for Biotechnology in the Forest Industries."
175. Protein Engineering Network of Centers of Excellence (PENCE)/Paprician Symposium, Pulp and Enzymes: New Catalysts for the Environment. "Xylanases for Pulp Bleaching and Their Use in the EnZone Process." Vancouver, Canada, November 19, 1992.
176. Enzyme Augmentation of Kraft Pulp Bleaching with Oxygen-Based Chemicals. *Proc. Tappi Environ. Conf.* Boston, MA., March, 1993.
177. Bleaching of Kraft Pulps with the EnZone Process. *Non-Chlorine Bleaching Conference*, Hilton Head, S.C., March, 1993.
178. "Pulp Bleaching with the EnZone Process." The International Conference, Lignin Biodegradation and Transformation, FEMS Symposium, Lisbon, Portugal, April, 1993. Chairman of the session "Applications to Biopulping and Biobleaching."
179. "Enzyme Mechanisms Involved in Cellulose and Hemicellulose Degradation" Annual Meeting of the Mycological Society of America. Athens, GA June, 1993.
180. Rotary, Kungshamn, Sweden, July, 1993. "An American University - Information on The University of Georgia."
181. 22nd Meeting of the Federation of European Biochemical Societies, Stockholm, Sweden, July 1993. "Enzymes As One Stage in Pulp Bleaching," Poster Presentation.
182. STORA (The Worlds Third Largest Pulp and Paper Company), Säfle, Sweden, August, 1993. "The Development of New Biotechnological Bleaching and De-Inking Processes."
183. Swedish Pulp and Paper Research Institute, Stockholm, Sweden, August, 1993. Invited Lecture. "Overview of Possibilities for Biotechnology in the Pulp and Paper Industries."

184. Kamyir Inc., Glens Falls, NY, September 1993. "Biotechnology in Pulp Bleaching."
185. Genencor International Inc., San Francisco, CA, November 1993.
  - A) "Role of Cellobiose Oxidoreductases in White-Rot Fungi"
  - B) "Bleaching Results Obtained With the EnZone Process"
186. Alpura Koreco, AG (Nestle) Konolfingen, Switzerland, November 1993. "Evaporation of Water From SOTEC After Treatment With Enzymes and/or Emulsifiers."
187. Plant Cellular and Molecular Biology Retreat, Unicoi, GA December 1993. "Overview of Basic and Applied Research In My Laboratory."

**Post Doctors and Visiting Scientists** (Swedish Pulp and Paper Research Institute. Stockholm, Sweden)

Dr W. Rzedowski, Institute of Fermentation Industry, Warsaw, Poland, August 1967-January 1968

Dr Anna Nowakowska-Waszezuk, Department of Industrial Microbiology, Technical University of Lodz, Poland

Dr Bill Goodell, California Institute of Technology, California, USA, March 1970-November 1971

Dr Juraj Varadi, State Forest Products Research Institute, Bratislava, Czechoslovakia, October 1971-July 1972

Dipl ing Michael Sinner, Institut für Holzchemie und Chem. Technologie des Holzes, Hamburg, West Germany, 1971

Dr Hagen Berndt, Ordinat für Holzbiologie, Universität Hamburg, West Germany, 1972

Dr. R.B. Cain, University of Canterbury, Biological Laboratory, Canterbury, Kent, England, 1972

Dr Stanley C. Froehner, California Institute of Technology, California, USA, September 1972-June 1974

Dr Margaret Streamer, Cook University, Townsville, Australia, March 1973-March 1974

Dr Nigel Pool, Div of Agricultural Bacteriology, University of Aberdeen, Scotland, 1973

Mr Tadakazu Hiroi, Government Forest Experiment Station, Meguro, Tokyo, Japan, September 1973-September 1974

Dr Arthur R. Ayers, University of Colorado, Boulder, USA, August 1975-March 1977

Mrs. Sandra Martin, University of Colorado, Boulder, USA, Nov. 1975-April 1977

Dr Czeslaw Szajer, College of Agriculture, Lublin, Poland, October 1975-April 1976

Dr Michael Piasecki, Institute of Food Technology of Plant Origin. Poznan, Poland, 1976

Dipl biol Hans Peter Meyer, University of Fribourg, Schweiz, 1977

Dr Vasanti Deshpande, National Chemical Laboratory, Poona, Indien, 1977

Agr o forst kand Annele Hatakka, Universitetet i Helsingfors, Finland, 1977

Prof Hartmut Kern, Kernforschungsanlage, Jülich, West Germany, November 1977

Dr John Buswell, Paisley College, Scotland, October 1978-June 1980

Dr Jugal Gupta, Chandigarh University, Chandigarh, India, February 1979-June 1980

Dr Etienne Odier, Inst National Agronomique, Paris, France, 1979

Dr Mala Rao, National Chemical Laboratory, Poona, India, 1980

Dr Stanislav Romanov, Inst of Microbiology, Minsk, USSR, September 1980-April 1981

Dr Jindrich Volc, Inst of Microbiology, Praha, Czechoslovakia, 1981, 1984 and 1986

Mr Hui-sheng Yu, Tianjin Inst of Pulp & Paper, Tianjin, China, January 1982-January 1984

Professor Lars Ljungdahl, Univ. of Georgia, Athens, GA, USA, September 1982-September 1983

Dr Atsumi Nishida, Forest Prod. Lab., Tsukuba, Japan, September 1982-September 1983

Dr M V Deshpande, Natl. Chem. Lab., Poona, India, 1983

Dr Brigitte Bes, University of Toulouse, France, December 1983-February 1985

Eng. Pastor Lopez, ICIDCA, Cuba, November 1984-August 1985

Dr Nancy Fernandez, ICIDCA, Cuba, April 1985-September 1985

Mr Ilko Stoytchev, University of Sofia, Bulgaria, January 1986-May 1987

Mr J-I Yang, Republic of China (grad. student), April 1986-1989

Dr. F. Nerud, Inst. of Microbiology, Praha, Czechoslovakia, June 1986-August 1986

Mrs Svetla Petrova, Univ. of Sofia, Bulgaria, November 1986

Dr Ralf Pätzold, Institut für Makromolekulare Chemie, Darmstadt, W-Germany, November 1987-Jan. 1988

Eng. Juan Fernandez, ICIDCA, Cuba, November 1987-March 1988

Dr. Ricardo Fitzsimons, Ass. Prof., Dept. of Biol. Sciences, University of Rosario, Argentina,  
March 1988-March 1989

Mrs. Eva Martinez, ICIDCA, Cuba, March 1988-Dec. 1988

**Graduate Students** (Swedish Pulp and Paper Research Institute, Stockholm, Sweden)

Westermarck, U., Ph.D. from The Royal Institute of Technology, Stockholm, Sweden.

Ander, P., Ph.D. from The Royal Institute of Technology, Stockholm, Sweden.

Hamp, S.G., Ph.D. from The Royal Institute of Technology, Stockholm, Sweden.

Pettersson, B.A., Lic. of Technol. from The Royal Institute of Technology, Stockholm, Sweden.

Vallander, L. Lic. of Technology from The Royal Institute of Technology, Stockholm, Sweden.

**Post Doctors and Visiting Scientists** (University of Georgia, Athens, Georgia)

Buswell, J.A. 8/89 - 6/90, University of Birmingham, Ph.D. "The Microbial Degradation of Methoxylated Phenolic Compounds." Associate Professor, The Chinese University of Hong Kong.

Yang, J.L. 7/89 - present, The Royal Institute of Technology, Dr. of Technology "Development of Bioassays for the Characterization of Pulp Fiber Surfaces/ Biobleaching" Research Scientist, University of Georgia, Athens, Georgia.

Dean, J.F.D. 8/90 - present, Purdue University West Lafayette, IN, Ph.D. "Lignin Biosynthesis in Forest Trees" Associate Research Scientist, University of Georgia, Athens, Georgia.

Samejima, M. 10/90 - 7/92 University of Tokyo, Tokyo Japan, Ph.D. "Characterization of Cellobiose Oxidase and Cellobiose:Quinone Oxidoreductase from *Phanerochaete chrysosporium*" Assistant Professor, University of Tokyo.

Sterjiades, R. 10/90 - 10/92 Universite Joseph Fourier, Grenoble, France, Ph.D. "Isolation and Characterization of Laccases and Peroxidases from Cell Cultures of Forest Trees."

Liu, L. 9/92 - Present Miami University, Miami Ohio, Ph.D. "Mechanisms of Lignin Biosynthesis During Xylogenesi" Research Scientist, University of Georgia, Athens, Georgia.

LaFayette, P. 8/92 - Present University of California Ph.D. "Modified Lignin Deposition in Transgenic Mutants of Yellow Poplar" Research Scientist, University of Georgia, Athens, Georgia.

Habu, N. 10/92 - present University of Tokyo, Tokyo Japan. Ph.D. "Characterization of Cellobiose Oxidase and Cellobiose:Quinone Oxidoreductase from *Phanerochaete chrysosporium*" Research Scientist, University of Georgia, Athens, Georgia.

Jaitley, A.K. 6/92-9/92 "Isolation of Thermostable Xylanases"

**Graduate Students** (University of Georgia, Athens, Georgia)

Cates, D. 10/1-Present Department of Forest Resources, B.S. "Bleaching of Pulp with Enzymes" Graduate Students, University of Georgia, Athens, Georgia.

Wu, Y-T 9/92-Present Department of Biochemistry, B.S. "Mechanisms of Lignin Biosynthesis During Xylogenesis" Graduate Students, University of Georgia, Athens, Georgia.

Lou, G. 1/90-7/92 University of Georgia, M.S. "Biobleaching of Pulp" Doctoral Student - Institute of Paper Science Technology.

Plummer, D. (Pre-) 7/90 - Present University of Georgia, M.S. "Host Pathogenic Interaction, Loblolly Pine/Fusiform Rust" Doctoral Student, University of Georgia, Athens, Georgia.

Simon, P. (Pre-) University of Georgia, M.S. "Isolation and Characterization of Intracellular Enzymes Participating in Lignin Metabolism in White-rot Fungi" Doctoral Student, University of Georgia, Athens, Georgia.

Sethuraman, Anand (Pre-) University of Georgia, M.S. ....  
Doctoral Student, University of Georgia, Athens, Georgia.

### **Undergraduate Students, Course Work 399**

James Todd Hoopes, Summer 1990

Angela J. Hall, Fall 1991 and Spring 1992.

Dwight H. Cates, Spring 1992.

Paula Graymer, Undergraduate Summer Intern, Metallo-Enzyme Center Grant, Summer 1992.

Jeffrey Zalatoris, Undergraduate Summer Intern, Metallo-Enzyme Center Grant, Summer 1992.

Seanna Lescher, Summer 1992 - present

Adjay Pancholy, Undergraduate Summer Intern, Biochemistry program, Summer 1992.

Christopher Hoehamer, Fall 1992 - present

### Teaching at the University of Georgia

Winter Quarter, 1991, Biochemistry 812A, Biosynthesis and Biodegradation of Wood and Wood Components.

Frequent lecturer at other courses around campus.

Spring Quarter, 1993, Biochemistry 812A, Biosynthesis and Biodegradation of Wood and Wood Components.

Spring Quarter, 1993, Biochemistry 901.

# KARL-ERIK L. ERIKSSON. LIST OF PUBLICATIONS

1. Eriksson, K.-E. and Kiessling, H. (1960). A Study of Storing and Preservation Conditions of Wet Spruce Mechanical Pulp. 1. Heat Inactivation of Phenyl Mercury Acetate as a Preservative for Groundwood Pulp. *Svensk Papperstidn.* **63**:752-757.
2. Eriksson, K.-E., Kiessling, H. and Steenberg, B. (1961). A Study of Storing and Preservation Conditions of Wet Spruce Mechanical Pulp. 2. Ion Exchange Properties of Spruce Groundwood Pulp with Special Regard to the Fungicide Phenyl Mercury Acetate. *Svensk Papperstidn.* **64**:329-335.
3. Eriksson, K.-E. (1961). A Study of Storing and Preservation Conditions of Wet Spruce Mechanical Pulp. 3. The Mechanism of the Inactivation of the Preservative Properties of Phenyl Mercury Acetate by Groundwood Pulp. *Svensk Papperstidn.* **64**: 381-385.
4. Eriksson, K.-E. (1962). A Study of Storing and Preservation Conditions of Wet Spruce Mechanical Pulp. 4. A Chemical Method for Determining the Storage Quality of Moist Groundwood Pulp. *Svensk Papperstidn.* **65**:521-525.
5. Eriksson, K.-E. (1963). A Study of Storing and Preservation Conditions of Wet Spruce Mechanical Pulp. 5. Inactivation of Organomercurial Preservatives in Groundwood Mill Systems. *Svensk Papperstidn.* **66**:884-886.
6. Widén, R. and Eriksson, K.-E. (1964). A Method for Automatic Packing of Sephadex Columns. *J. Chromatog.* **15**:429-430.
7. Bjellfors, C., Eriksson, K.-E. and Johanson, F. (1965). Influence of Cations on Cellulose Fibre Networks. *Svensk Papperstidn.* **68**:865-869.
8. Björndal, H., Eriksson, K.-E., Garegg, P.J., Lindberg, B. and Swan, B. (1965). Studies on the Xylan from the Red Seaweed *Rhododymenia palmata*. *Acta Chem. Scand.* **19**:2309-2315.
9. Eriksson, K.-E. (1966). Impregnering av våt slipmassa. *Svensk Papperstidn.* **69**: 242-245.
10. Eriksson, K.-E. (1967). Studies on Cellulolytic and Related Enzymes. *Svensk Kem. Tidskr.* **79**:660.
11. Almin, K.E. and Eriksson, K.-E. (1967). Enzymic Degradation of Polymers. I. Viscometric Method for the Determination of Enzymic Activity. *Biochim. Biophys. Acta* **139**:238-247.
12. Almin, K.E., Eriksson, K.-E. and Jansson, C. (1967). Enzymic Degradation of Polymers. II. Viscometric Determination of Cellulase Activity in Absolute Terms. *Biochim. Biophys. Acta* **139**:248-253.

13. Almin, K.E. and Eriksson, K.-E. (1968). Influence of Carboxymethyl Cellulose Properties on the Determination of Cellulase Activity in Absolute Terms. *Arch. Biochem. Biophys.* **124**:129-134.
14. Ahlgren, E., Eriksson, K.-E. and Vesterberg, O. (1967). Characterization of Cellulases and Related Enzymes by Isoelectric Focusing, Gel Filtration and Zone Electrophoresis. I. Studies on *Aspergillus* Enzymes. *Acta Chem. Scand.* **21**:937-944.
15. Ahlgren, E. and Eriksson, K.-E. (1967). Characterization of Cellulases and Related Enzymes by Isoelectric Focusing, Gel Filtration and Zone Electrophoresis. II. Studies on *Stereum sanguinolentum*, *Fomes annosus* and *Chrysosporium lignorum* Enzymes. *Acta Chem. Scand.* **21**:1193-1200.
16. Eriksson, K.-E., Johanson, F. and Pettersson, B. (1967). Molecular Weight Fractionation of Cellulose by Gel Filtration Chromatography. *Svensk Papperstidn.* **70**:610-611.
17. Bucht, B. and Eriksson, K.-E. (1968). Extracellular Enzyme System Utilized by the Rot Fungus *Stereum sanguinolentum* for the Breakdown of Cellulose. I. Studies of the Enzyme Production. *Arch. Biochem. Biophys.* **124**:135-141.
18. Eriksson, K.-E. and Pettersson, B. (1968). Extracellular Enzyme System Utilized by the Rot Fungus *Stereum sanguinolentum* for the Breakdown of Cellulose. II. Purification of the Cellulase. *Arch. Biochem. Biophys.* **124**:142-148.
19. Björndal, H. and Eriksson, K.-E. (1968). Extracellular Enzyme System Utilized by the Rot Fungus *Stereum sanguinolentum* for the Breakdown of Cellulose. III. Characterization of Two Purified Cellulase Fractions. *Arch. Biochem. Biophys.* **124**:149-153.
20. Eriksson, K.-E. and Pettersson, G. (1968). Studies on Cellulolytic Enzymes. V. Some Structural Properties of the Cellulase from *Penicillium notatum*. *Arch. Biochem. Biophys.* **124**:160-166.
21. Eriksson, K.-E. and Winell, M. (1968). Purification and Characterization of a Fungal  $\beta$ -Mannanase. *Acta Chem. Scand.* **22**:1924-1934.
22. Axelsson, K., Björndal, H. and Eriksson, K.-E. (1968). An Extracellular Glucan Produced by the Rot fungus *Stereum sanguinolentum*. *Acta Chem. Scand.* **22**:1363-1364.
23. Eriksson, K.-E., Pettersson, B.A. and Steenberg, B. (1968). Gel Filtration Chromatography of Hemicelluloses and Carboxymethylcellulose in Cadoxen Solution. *Svensk Papperstidn.* **71**:695-698.
24. Bucht, B. and Eriksson, K.-E. (1969). Extracellular Enzyme System Utilized by the Rot Fungus *Stereum sanguinolentum* for the Breakdown of Cellulose. IV. Separation of Cellobiose and Aryl- $\beta$ -glucosidase Activities. *Arch. Biochem. Biophys.* **129**:416-420.

25. Eriksson, K.-E. and Rzedowski, W. (1969). Extracellular Enzyme System Utilized by the Fungus *Chrysosporium lignorum* for the Breakdown of Cellulose. I. Studies on the Enzyme Production. *Arch. Biochem. Biophys.* **129**:683-688.
26. Eriksson, K.-E. and Rzedowski, W. (1969). Extracellular Enzyme System Utilized by the Fungus *Chrysosporium lignorum* for the Breakdown of Cellulose. II. Separation and Characterization of Three Cellulase Peaks. *Arch. Biochem. Biophys.* **129**:689-695.
27. Eriksson, K.-E., Hollmark, B.H. and Pettersson, A. (1969). Enzymic Attack on Wood Fibers. *Svensk Papperstidn.* **72**:551-552.
28. Eriksson, K.-E. and Hollmark, B.H. (1969). Kinetic Studies of the Action of Cellulase upon Sodium Carboxymethyl Cellulose. *Arch. Biochem. Biophys.* **133**: 233-237.
29. Eriksson, K.-E. (1969). New Methods for the Investigation of Cellulases, pp. 83-104. *Advances in Chemistry Series, No. 95: Cellulases and Their Applications*. American Chemical Society, Washington, DC.
30. Eriksson, K.-E. (1970). Biochemistry and Microbiology for Paper Engineers. IPPTA, Vol. VII, No. 3, 215-222.
31. Eriksson, K.-E. (1970). Mikrobiologiska problem i massa- och pappersindustrin. SCAN Forsk Rapport nr 10, Stockholm.
32. Boutelje, J., Eriksson, K.-E. and Hollmark, B.H. (1971). Specific Enzymic Hydrolysis of the Xylan in a Spruce Holocellulose. *Svensk Papperstidn.* **74**:32-37.
33. Eriksson, K.-E. and Pettersson, B. (1971). Purification and Characterization of Xylanase from the Rot Fungus *Stereum sanguinolentum*. *Int. Biodetn. Bull.* **7**:115-119.
34. Eriksson, K.-E., Larsson, K., Norin, T. and Winell, B. (1971). Barkens tekniska användningsmöjligheter. *Svensk Papperstidn.* **74**:685-690.
35. Eriksson, K.-E., Lindholm, U. (1971). Ligninets mikrobiella nedbrytning. *Svensk Papperstidn.* **74**:701-706.
36. Almin, K.E., Eriksson, K.-E. and Pettersson, B.A. (1972). Determination of the Molecular Weight Distribution of Cellulose on Calibrated Gel Columns. *J. Appl. Pol. Sci.* **16**:2583-2593.
37. Eriksson, K.-E. and Pettersson, B. (1972). Extracellular Enzyme System Utilized by the Fungus *Chrysosporium lignorum* for the Breakdown of Cellulose, pp. 116-120. In: *Biodeterioration of Materials*, Vol. 2. Applied Science Publishers, Ltd., London.
38. Eriksson, K.-E. (1973). Barkens mikrobiella nedbrytning. *Svensk Papperstidn.* **76**: 243-249.

39. Eriksson, K.-E. and Pettersson, B. (1973). A Zymographic Technique for the Detection of Carbohydrate Enzymes. *Anal. Biochem.* **56**:618-620.
40. Eriksson, K.-E. and Goodell, E.W. (1974). Pleiotropic Mutants of the Wood-Rotting Fungus *Polyporus adustus* Lacking Cellulase, Mannanase and Xylanase. *Can. J. Microbiol.* **20**:371-378.
41. Westermark, U. and Eriksson, K.-E. (1974). Carbohydrate-Dependent Enzymic Quinone Reduction During Lignin Degradation. *Acta Chem. Scand.* **B28**:204-208.
42. Westermark, U. and Eriksson, K.-E. (1974). Cellobiose:Quinone Oxidoreductase, a New Wood-Degrading Enzyme from White-rot Fungi. *Acta Chem. Scand.* **B28**:209-214.
43. Eriksson, K.-E. (1974). Mikroorganismer och enzymer som redskap i en ny utveckling inom skogsindustrin. *Norsk Skogindustri* **28**:125.
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